Math 142
Spring, 2005
Quiz 23 - §§3.1, 3.2

Name: **Solutions**

Complete the following problems. Show all work to receive full credit.

1. Compute the following indefinite integrals:

   (a) $\int e^{-x} + e^{x} dx$

   $$= -e^{-x} + e^{x} + C$$

   (b) $\int \frac{1}{7} - x^2 + \frac{1}{x} dx$

   $$= \frac{1}{7}x - \frac{1}{3}x^3 + \ln \mid x \mid + C$$

   (c) $\int \cos\theta \left(\tan\theta + \sec\theta\right) d\theta$

   $$= \int \cos\theta \tan\theta + \cos\theta \sec\theta d\theta$$
   $$= \int \cos\theta \frac{\sin\theta}{\cos\theta} + \cos\theta \frac{1}{\cos\theta} d\theta$$
   $$= \int \left(\sin\theta + 1\right) d\theta$$
   $$= -\cos\theta + \theta + C$$

   (d) $\int 4x^3 \left(x^4 - 1\right)^2 dx$

   $$= \frac{1}{3}(x^4 - 1)^3 + C$$